

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Original) Reactor and/or mixing vessel comprising at least
  - an outer in a direction extending vessel-like member and
  - an inner in the direction extending member arranged within the outer member, at least one of which is adapted for rotation with respect to the other member, the direction being the rotation axis, and at least one of which has a cross-section at least nearly perpendicular to the rotation axis of non-circular shape in such a way that the gap between the inner and the outer members is of non-constant width therebetween in circumferential direction, and
  - at least one inlet for introduction of fluid and at least one outlet for discharging fluid in and out of the reactor and/or mixing vessel.

2. (Currently Amended) Reactor and/or mixing vessel according to claim 1, ~~characterized in that~~ wherein the outer member is a cylinder having a cross-section of circular shape and the inner member does have a cross-section of non-circular shape.

3. (Currently Amended) Reactor and/or mixing vessel according to ~~one of the claims 1 or 2, characterized in that~~ claim 1, wherein the inner member is

adapted for rotation with respect to the outer member.

4. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 3, characterized in that claim 1, wherein the at least one member ~~does have~~having a cross-section of non-circular shape ~~such as~~has a shape selected from the group consisting of an elliptic-, a triangle-, a square- ~~or~~and a polygon-like shape, ~~preferably with~~said shape having rounded off edges.

5. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 4, characterized in that claim 1, wherein at least one of the two members ~~does have~~has at least one of a wave-like shape, ~~and/or~~ comprises longitudinally extending grooves, ~~and/or~~ comprises perforations.

6. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 5, characterized in that claim 1, wherein both members are adapted for rotation, ~~preferably~~ in opposite direction.

7. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 6, characterized in that claim 1, wherein the two members are arranged concentrically.

8. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 6, characterized in that claim 1, wherein the two members

are arranged eccentrically.

9. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 8, characterized in that claim 1, wherein at least one member has a wall which is at least partially permeable for fluids insofar that fluid exchange of component(s) at least one component between inside and outside the reactor and/or mixing vessel is possible.

10. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 9, characterized in that claim 1, wherein at least one member has a permeable member wall can be used for filtration of component(s) at least one component from the reaction mixture in the reactor and/or mixing vessel.

11. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 10, characterized in that claim 1, wherein the ratio of width of the largest gap to the smallest gap is more than 1.1, preferably is within the range of 1.2 to 3.

12. (Currently Amended) Reactor and/or mixing vessel according to one of the claims 1 to 11, characterized in that claim 1, wherein the ratio between the average diameter of the outer member such as e.g. a cylinder to the smallest gap width between the two members is smaller than 50, preferably within the range of 5 to 20.

13. (Currently Amended) Process for reacting and/or mixing of at least one fluid component within a reactor ~~according to one of the claims 1 to 12,~~ characterized in that the fluid is mixed or reacted and/or mixing vessel comprising at least

- an outer in a direction extending vessel-like member and
- an inner in the direction extending member arranged within the outer member, at least one of which is adapted for rotation with respect to the other member, the direction being the rotation axis, and at least one of which has a cross-section at least nearly perpendicular to the rotation axis of non-circular shape in such a way that the gap between the inner and the outer members is of non-constant width therebetween in circumferential direction,

and

- at least one inlet for introduction of fluid and at least one outlet for discharging fluid in and out of the reactor and/or mixing vessel, said process comprising

mixing or reacting a fluid within a gap between an~~said~~ outer and  
~~an~~said inner member, at least one of which is of a cross-section of non-circular shape so that the gap width at a fixed position varies with the rotation of at least one of the two members.

14. (Currently Amended) ~~Reaction~~Process according to claim 13, ~~characterized in that by~~including rotating at least one of the members to generate a substantially narrow distribution of energy dissipation rate is

generated for creating a substantially homogenous flow environment.

15. (Currently Amended) ~~Process according to one of the claims 13 or 14, characterized in that~~claim 13, wherein said fluid includes components which are used to carry out biochemical or bioreactions within a~~the~~ reactor according to one of the claims 1 to 12and/or mixing vessel.

16. (Currently Amended) ~~Process according to one of the claims 13 to 15, characterized, in that~~claim 13, wherein said mixing or reacting a fluid executes a single or multiple phase reaction or a mixing process is executed which comprises mixing of components in a reactor according to one of the claims 1 to 12.

17. (Currently Amended) ~~Polymerization~~Process according to claim 13, wherein said mixing or reacting a fluid executes polymerization or copolymerization process of monomers and/or oligomers within a reactor according to one of the claims 1 to 12.

18. (Currently Amended) ~~Biochemical~~process according to claim 13, wherein said mixing or reacting a fluid executes a biochemical or bioreaction of at least one biochemical component within a reactor ~~according to one of the claims 1 to 12.~~

19. (Currently Amended) ~~A granulation and/or coagulation process of~~

~~particles comprising granulating said particles dispersed in a fluid in the granulator or coagulator, respectively, equivalent to a reactor according to one of the claims 1 to 12~~Process according to claim 13, wherein said mixing or reacting a fluid executes a granulation and/or coagulation process of particles including granulating said particles dispersed in a fluid in said reactor and/or mixing vessel serving as a granulator or coagulator.